

Absolute Maximum Ratings

Absolute Maximum Ratings indicate sustained limits beyond which damage to the device may occur. ($T_c = 25^\circ\text{C}$ unless otherwise specified.)

		Minimum	Maximum	Units	Test Conditions	
V_{cc}	Supply Voltage	Permanent	-0.3	50	V	Pin 3 to Pin 1 (1), for 10 seconds
		Reverse	-16	—		
V_{offset}	Logic to Power Ground Offset	$V_{cc} - 50$	$V_{cc} + 0.3$			
V_{in}	Input Voltage	-0.3	30			
I_{in}	Input Current	—	10	mA		
V_{out}	Output Voltage	$V_{cc} - 50$	$V_{cc} + 0.3$	V		
I_{out}	Output Current	Self-limited				
V_{dg}	Diagnostic Output Voltage	-0.3	30	V		
I_{dg}	Diagnostic Output Current	—	10	mA		
E_{av}	Repetitive Avalanche Energy	—	200	mJ	$I = 2\text{A}$ (2)	
ESD1	Electrostatic Discharge (Human Body Model)	—	4000	V	$C = 100\text{ pF}$, $R = 1500\Omega$	
ESD2	Electrostatic Discharge (Machine Model)	—	1000	V	$C = 200\text{ pF}$, $R = 0\Omega$	
PD	Power Dissipation	—	28	W	$T_{case} = 25^\circ\text{C}$	
T_{JOP}	Operating Junction Temperature Range	-40	Self-limited			
T_{Stg}	Storage Temperature Range	-40	175	$^\circ\text{C}$		
T_L	Lead Temperature (Soldering, 10 seconds)	—	300			

NOTES: (1) with 15k Ω resistors in input and diagnostic

(2) maximum frequency depends on heatsink (rectangular waveform)

Static Electrical Characteristics

($T_c = 25^\circ\text{C}$ unless otherwise specified.)

		Minimum	Typical	Maximum	Units	Test Conditions
V_{ccop}	Operating Voltage Range	5	—	50	V	
I_{ccoff}	Sleep Mode Supply Current	—	40	—	μA	$V_{cc} = 24\text{V}$, $V_{in} = 0\text{V}$
I_{ccon}	Supply Current (Average)	—	3	—	mA	$V_{in} = 5\text{V}$
I_{ccac}	Supply Current (AC RMS)	—	20	—	μA	$V_{in} = 5\text{V}$
V_{ih}	High Level Input Threshold Voltage	—	2	2.5	V	
V_{il}	Low Level Input Threshold Voltage	1	1.8	—		
I_{ion}	On-State Input Current	10	—	70	μA	$V_{in} = 3.5\text{V}$
I_{loff}	Off-State Input Current	1	—	30		$V_{in} = 0.4\text{V}$
I_{oh}	Output Leakage Current	—	20	—		$V_{out} = 6\text{V}$
I_{ol}	Output Leakage Current	0	—	10		$V_{out} = 0\text{V}$
V_{dgl}	Low Level Diagnostic Output Voltage	—	0.3	—	V	$I_{dg} = 1.6\text{mA}$
I_{dgh}	Diagnostic Output Leakage Current	0	—	10	μA	$V_{dg} = 5\text{V}$
$R_{DS(on)}$	On-State Resistance	—	80	100	$\text{m}\Omega$	$I_{out} = 1\text{A}$
		—	120	—		$V_{cc} = 5\text{V}$, $I_{out} = 1\text{A}$

Switching Electrical Characteristics

($V_{CC} = 14\text{V}$, Resistive Load (R_L) = 12 Ω , $T_c = 25^\circ\text{C}$.)

		Minimum	Typical	Maximum	Units	Test Conditions
t_{on}	Turn-On Delay Time to 90%	—	50	—	μs	
t_{off}	Turn-Off Delay Time to 10%	—	60	—		
dv/dt_{on}	Slew Rate On	—	3	—	V/ μs	
dv/dt_{off}	Slew Rate Off	—	5	—		

Protection Characteristics

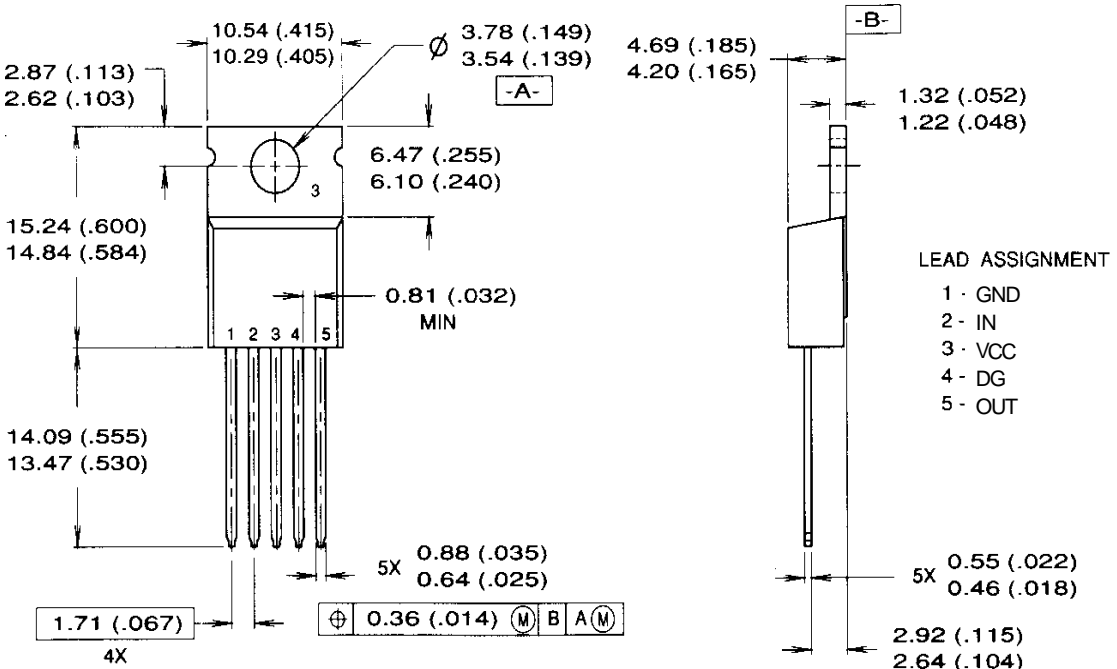
	Minimum	Typical	Maximum	Units	Test Conditions	
I_{lim} Internal Current Limit	—	20	—	A		
V_{sc} Short Circuit Detection Voltage	—	3.5	—	V		
V_{slh} Open Load Detection Voltage	—	3.5	—			
V_{cl1} Output Negative Clamp	50	54	—			$I_{out} = 10mA$
V_{cl2} Output Negative Clamp	—	56	62			$I_{out} = 2A$

Thermal Characteristics

	Minimum	Typical	Maximum	Units	Test Conditions
T_{jcd} Thermal Shutdown Temperature	—	170	—	°C	
T_{hys} Thermal Hysteresis	—	5	—		
R_{thjc} Thermal Resistance, Junction to Case	—	3.5	—	°C/W	
R_{thja} Thermal Resistance, Junction to Ambient	—	50	—		

IR6226

Case Outline — TO-220 (IR6226)



NOTES:

1. Dimensioning and tolerancing per ANSI Y14.5M, 1982
2. Controlling dimension: INCH
3. Dimensions shown are in millimeters (inches)
4. Heatsink and lead measurements do not include burrs.